In recent years we get more & more facts showing that the present appearance of our planet was formed not only by slow evolutionary processes, like wind erosion, but also by gigantic natural cataclysms. Geologists find evidence in sedimentary rock that extremely powerful impacts repeatedly occurred in the geological history of the Earth.

Since the late Paleozoic period (i.e. for the last 250 million years) there are noticeable gaps in the evolution of living organisms. Paleontologists established that around 247, 220 and 65 million years ago about 95% of all life on Earth perished. Most recently, for example, the gigantic dinosaurs died out. It is obvious that such extinctions of terrestrial living organisms are the complex result of many processes. Sharp climate variations, ice formations, fluctuation of the level of oceans, decreases of concentration of oxygen in the waters of seas and oceans, and different extraterrestrial circumstances all played a part. However, to name the most important reason, was extremely difficult to discover.

Scientists assumed that at that time the Earth underwent bombardment by large asteroids. Space and aerial photography, executed in slanting solar illumination, revealed likely asteroid impact sites. Studies at the sites confirmed the Earth’s encounters with celestial bodies.

Impact with an asteroid about 10 kilometers in diameter is thought to have caused mass death of dinosaurs. If the impact had arrived on the land, it would have sharply cooled, but if over the surface of ocean or sea, then water vapor would have produced a greenhouse effect and begun to warm the Earth everywhere. The Earth may also have witnessed hot nitric acid rains, whose action on the environment and the animal kingdom was catastrophic. Such a large impact could occur on Earth every hundred million years. Impacts of a smaller size are more frequent and also less damaging.

It is possible to detect dangerous objects decades before their collision with Earth. Scientists use telescopes to calculate the speed & orbit of an asteroid. The best way to change the trajectory of motion is to send a rocket towards the asteroid. The purpose of the rocket is not to collide with the asteroid, to explode close enough to the asteroid to change its orbit. Smaller asteroids can also be cut by lasers, with no effect on Earth.

The technology of the 21st Century should be able to detect all large asteroids & possible impacts with Earth. We will only have to worry about objects whose trajectory is very hard to observe. To solve this problem, scientists need to see Tunguska-sized asteroids from two points at the same time. The future project of 3 telescopes around Earth’s orbit can make it possible.

We don’t know how much it will cost, but in comparison with US Government Military Budget, it is very cheap. The Australian Spaceguard Survey estimates the project to cost 10 million US dollars per year. The US Government currently spends around 330 billion, according to www.whitehouse.gov, on military projects per year. The impact prevention projects have the same aim as military projects: to protect. An impact with big asteroid could do much more damage than our strongest military enemy, so we should be able to spend at least 10 million dollars per year to prevent another catastrophe. I also think all countries in the world should be interested in supporting Spaceguard program. It needs to be an international collaboration. According to Space Daily, funds for this program are reasonable, at approximately a half a penny (US) per person, per year in the whole world. Worldwide Spaceguard program does very important mission for the whole civilization.

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